UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/827,042	04/19/2004	Michael G. Martinek	29757/SH-052-D1	2382

4743   7590   11/10/2004

MARSHALL, GERSTEIN & BORUN LLP
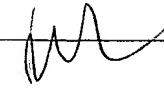6300 SEARS TOWER
233 S. WACKER DRIVE
CHICAGO, IL 60606

EXAMINER
ASHBURN, STEVEN L

ART UNIT	PAPER NUMBER
3714	

DATE MAILED: 11/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _19 April 2004_.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-47_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-47_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _19 April 2004_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _8/18/04_.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis

for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 1-6, 11-35, 39-45 and 47 are rejected under 35 U.S.C. 102(e) as being anticipated by

Mathur et al., US 6,671,745 B1 (Dec. 30, 2003).

Claim 1. Mathur discloses a computing apparatus including the following features:

a. A computerized controller having a processor, memory, and a nonvolatile storage. See

fig. 2. The system disclosed by Mathur is capable of executing a variety applications, including

wagering games. *See col. 2:4-49.*

b. A operating system comprising a system handler application operable to dynamically link

with at a plurality of program objects and load said program objects. *See fig. 2, 3; col. 4:7-12;*

6:28-65., 9:48-10:24.

c. Operating system kernel that executes the system handler application. *See fig. 2, 3; col.*

7:57-8:14; col. 8:57-10:25.

Claim 2. A system handler application including a device handler. See id.

Claim 3. A system handler unloading, loading and executing program shared objects. See col.

7:56-8:15..

Claim 4. Nonvolatile storage stores program variables, such that loss of power does not result in loss of the state of the computerized system. See 5:1-26, 8:36-65.

Claim 5. Executing a callback function upon alteration of data in non-volatile memory. *See 8:36-46, 12:20-55.* Mathur executes a function mirrors data into a non-volatile memory. *See id.*

Claim 6. A IBM PC-compatible computer. *See col. 4:15-30.*

Claim 11. A system handler application having an Application Program Interface (API) having functions callable from the program shared object, the API having a plurality of functions callable by and used by at least some of the shared objects. *See fig. 2, 3; col. 4:7-12; 6:28-65., 9:48-10:24.*

Claim 12. A system handler having an event queue. *See col. 7:6-10, 7:57-62, 8:62-65, 9:25-26.*

Claim 13. Loading a shared object, executing a shared object, and accessing an storing data in nonvolatile storage. *See fig. 2, 3; col. 5:1-26, 8:36-65; 10:13-31.*

Claim 14. Unloading, loading and executing program shared objects. *See col. 7:56-8:15.*

Claim 15. Executing a callback function upon alteration of data in non-volatile memory. *See 8:36-46, 12:20-55.* Mathur executes a function mirrors data into a non-volatile memory. *See id.*

Claim 16. A general-purpose computer having a customized kernel. *See col. 4:22-30; 7:57-63.* The kernel is customized for gaming use because it is modified for use in an embedded system, such as a gaming machine or point-of-sale, that does not use standard input devices. *See col. 2:12-3:16.*

Claim 17. A modified kernel that accesses user level code from ROM, and having selected device handlers disabled. *See col. 2:36-48, 3:5-16, 4:55-5:41.*

Claim 18. A general-purpose computer having nonvolatile storage stores program variables, such that loss of power does not result in loss of the state of the computerized system. *See 5:1-26, 8:36-65.* The system disclosed by Mathur is capable of executing a variety applications, including wagering games. *See col. 2:4-49.*

Claim 19. A operating system, comprising a processor and memory wherein the memory contains shared objects and a system handler, and the system handler is adapted to execute a shared object called from memory. *See fig. 1-3; col. 4:7-12; 6:28-65., 9:48-10:24.* The system disclosed by Mathur is capable of controlling a variety machines, including those for wagering games. *See col. 2:4-49.*

Claim 20. A general-purpose computer having nonvolatile storage stores program variables, such that loss of power does not result in loss of the state of the computerized system. *See 5:1-26, 8:36-65.* The system disclosed by Mathur is capable of executing a variety applications, including wagering games. *See col. 2:4-49.*

Claim 21. A machine readable medium having instructions for loading, unloading and executing program shared objects and storing data in non-volatile storage such that programs can access data variables in non-volatile storage. *See fig. 1-3; col. 4:7-12; 6:28-65, 7:56-8:15, 9:48-10:24..*

Claim 22. Executing a callback function upon alteration of data in non-volatile memory. *See 8:36-46, 12:20-55.* Mathur mirrors data into a secondary memory. *See id.*

Claim 23. Instructions for managing events via the system handler application. *See col. 7:6-10, 7:57-62, 8:62-65 and 9:25-26.*

Claim 24 and 25. A machine-readable medium with instructions thereon, the instructions when executed operable to cause a computer to manage at least one program object via a system handler application, such that a single program object is executed at any one time, wherein program objects are operable to share data in nonvolatile storage. *See fig. 2, 3; col. 4:7-12; 6:28-65., 9:48-10:24. 7:57-8:46, 12:20-55.* More specifically, Mathur discloses an embedded system adaptable to different tasks using customized program objects. In specialized applications, only one type of program object are executed at a time. *See col. 2:4-49.* Moreover, in a single processor embodiment, the lone processor is inherently limited to executing only one program object at a time. *See col. 4:48-54.*

Claim 26. A system handler application having an Application Program Interface (API) having functions callable from the program shared object, the API having a plurality of functions callable by and used by at least some of the shared objects. *See fig. 2, 3; col. 4:7-12; 6:28-65., 9:48-10:24.*

Claim 27. A general-purpose computer having nonvolatile storage stores program variables, such that loss of power does not result in loss of the state of the computerized system. *See 5:1-26, 8:36-65.* The system disclosed by Mathur is capable of executing a variety applications, including wagering games. *See col. 2:4-49.*

Claim 28. A computer architecture, comprising an operating system, and a shared objects; wherein each shared object describes personality in a selected mode. *See col. 10:25-50.* The system disclosed by Mathur is capable of executing a variety applications, including wagering games. *See col. 2:4-49.*

Claim 29. A IBM PC-compatible computer. *See col. 4:15-30.*

Claim 30. A system handler application. *See fig. 2, 3; col. 4:7-12; 6:28-65., 9:48-10:24.*

Claim 31. A system handler application including a device handler . *See id.*

Claim 32. A system handler having an event queue. *See col. 7:6-10, 7:57-62, 8:62-65 and 9:25-26.*

Claim 33. System handler having an API having functions callable from the program shared object, the API having a plurality of functions callable by and used by at least some of the shared objects. *See fig. 2, 3; col. 4:7-12; 6:28-65., 9:48-10:24.*

Claim 34. An event queue determining the order of execution of each device handler. *See col. 7:6-10, 7:57-62, 8:62-65 and 9:25-26.*

Claim 35. A system handler application having an API having a library of functions. *See fig. 2, 3; col. 4:7-12; 6:28-65., 9:48-10:24.*

Claim 39. A universal operating system comprising a system handler and kernel. *See fig. 1-3; col. 2:35-49, 3:56-4:30.*

Claim 40. A plurality of APIs. *See fig 2., 3.*

Claim 41. A system handler having an event queue. *See col. 7:6-10, 7:57-62, 8:62-65 and 9:25-26.*

Claim 42. A system handler application including a device handler . *See fig. 2, 3; col. 7:57-8:14; col. 8:57-10:25.*

Claim 43. A general-purpose computer having a customized kernel. *See col. 4:22-30; 7:57-63.* The system disclosed by Mathur is capable of executing a variety applications, including wagering games. *See col. 2:4-49.* It is customized for gaming because it provides inputs and output for devices other than keyboards, such as touch-screen displays.

Claim 44. A modified kernel that accesses user level code from ROM, and having selected device handlers disabled. *See col. 2:36-48, 3:5-16, 4:55-5:41.*

Claim 45. System is used to control a networked online system. *See col. 5:48-6:13.*

Claim 47. Mathur discloses a modified kernel that accesses user level code from ROM, and disables selected device handlers. *See col. 2:36-48, 3:5-16, 4:55-5:41.*

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 7-10, 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Mathur.

Claim 7. Mathur does not describe a LINUX kernel. Regardless, Mathur states that the disclosed

features can be applied to an operating system using a variety of programming languages. *See col. 10:60-*

62, 13:8-12. LINUX is commercially available operating system within the ordinary knowledge of an

artisan. Thus, it would have been obvious to an artisan the time of the invention to modify Mathur to

substitute a LINUX kernel for the same purpose of supporting an operating system.

Claim 8. Mathur discloses a modified kernel. *See col. 2:11-48,4:22-30; 7:57-63, 9:14-23.*

Claim 9. Mathur discloses a modified kernel that accesses user level code from ROM, and disables

selected device handlers. *See col. 2:36-48, 3:5-16, 4:55-5:41.*

Claim 10. Mathur discloses modular kernel modifications. *See fig. 3; 2:62-3:22, 10:32-44.*

Claim 36 and 37. Mathur discloses a customizable operating system with an event queue,

however it does not describes the specifics of the queue management. Thus, Mathur does not describe

queuing on first-come, first-serve basis (claim 36) and the event queue queuing using more than one

criteria (claim 37.). Regardless of the deficiencies, the features were known in the art at the time of the

invention and would have been obvious to an artisan. Event queues are a basic function of an operating

system for managing the system's response to events. It is fundamental programming technique to arrange

the event response protocol to respond to events in the most effective order. For example, in some cases,

event queues are simply organized on a first-serve/fist-serve basis. In other cases, the some events are

more critical than others. Thus, the event queues are simply organized on a priority basis. In still other

cases, events are handled on both a priority and first-come/first-serve basis. It would be a matter of design

choice as to which manner the event queue managed events. Thus, it would have been obvious to an

artisan at the time of the invention to modify the gaming operating system suggested by Mathur to

manage to event queuing on first-come, first-server basis or using more than one criteria to manage the

event queue's priorities to respond to common events, such as button presses, on a first-come/first-serve

basis while responding to critical events, such as security faults, immediately based on a higher priority.

**Claims 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mathur in view of
Arbaugh et al., U.S. Patent 6,185,678 B1 (Feb 6, 2001).**

Mathur describes all the features of the claims except having the operating system verify that the

operating system kernel or code for a shared object has not changed. Regardless, Arbaugh discloses an

method for initializing a computer system that ensures a system's integrity. *See col. 4:33-59.* The

reference teaches that it is known in prior system to verify software upon boot-up and while the operating

system is running. *See col. 2:52-3:3.* Integrity is validated at each layer transition in the bootstrap process

and a recovery process is included for integrity check failures. Ensuring the integrity is provided by the

use of public key cryptography, a cryptographic hash function, and public key certificates. *See id.* The

system does this by constructing a chain of integrity checks, beginning at power-on and continuing until

the final transfer of control from the bootstrap components to the operating system itself. *See id.* The

integrity checks compare a computed cryptographic hash value with a stored digital signature associated

with each component. *See id.* Cryptographic algorithms are combined with the chosen protocols to add

security to the recovery process, however if security is not a concern, then a less robust approach could be

used. *See id.* By ensuring the integrity of the system, Arbaugh suggests performing integrity checks

improves a system's security, reliability and total ownership cost will be improved. *See col. 4:33-37,*

4:60-65.

In view of Arbaugh, it would have been obvious to one of ordinary skill in the art at the time of

the invention to modify Mathur, wherein a specialized operating system protects data by storing it in non-

volatile memory, to add the feature of having the operating system verify that the operating system kernel

or code for a shared object has not changed to improve the data processing systems security, integrity,

reliability and total ownership cost.

Claims 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mathur in view of

Wiltshire, U.S. Patent 6,409, 602 (Jun. 25, 2002).

Mathur does not disclose controlling a progressive meter. Regardless the features were known in

the art at the time of the invention and would have been obvious to an artisan. Wiltshire discloses an

analogous gaming system in which PC-based gaming machines execute commercially available operating

systems to decrease the cost of developing and upgrading gaming devices. See col. 2:6-44, 4..44-7..5. In

particular, it describes an operating system controlling gaming system including managing a progressive

jackpot. *See col. 4:66-5..13, 5:45-64.* In view of Wiltshire, it would have been obvious to one of ordinary

skill in the art at the time of the invention to modify Mathur, wherein the operating system is

customizable for a variety of purposes, to add the features of controlling a a progressive meter. As taught

by Wiltshire, the modification would make the device attractive to operators whose casinos link gaming

machines to networks for player tracking, accounting, monitoring, and linking to progressive jackpots.

Prior Art, Not Relied On

The following prior art of record is not relied upon but is considered pertinent to applicant's

disclosure:

US 6,052,778 discloses a controller for embedded systems (such as a gaming device) having

dynamically linked program objects and application programs.
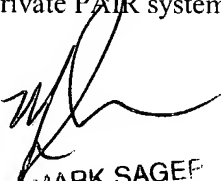
US 5,379,431 discloses a universal operating system.

WO 99/65579 discloses a universal controller for gaming devices.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should

be directed to Steven Ashburn whose telephone number is 703 305 3543. The examiner can normally be

reached on Monday thru Friday, 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derris

H Banks can be reached on 703-308-1745. The fax phone number for the organization where this

application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application

Information Retrieval (PAIR) system. Status information for published applications may be obtained

from either Private PAIR or Public PAIR. Status information for unpublished applications is available

through Private PAIR only. For more information about the PAIR system, see http://pair-

direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

MARK SAGER
PRIMARY EXAMINER

s.a.